

PATENT CLAIMS

1. A clamping device for components (8, 9), especially body parts, with a component clamping contour (11), especially a component flange, **characterized in that** said clamping means (1) has one or more said clamping devices (2, 3), which have each a frame-like structure (12) with a plurality of pairs of said fixed and mobile, strip-shaped clamping units (18, 19), which are adapted to the course of said component clamping contour (11) and are arranged therein, each with one or more said clamping segments (20), as well as a adjusting device (21), which feeds and clamps said mobile clamping unit(s) (19) to said component clamping contour (11).

2. A clamping device in accordance with claim 1, **characterized in that** the pairs of said clamping units (18, 19) are arranged one after another in the form of strips or in an open arc or in an arc closed to form a ring.

3. A clamping device in accordance with claim 1 or 2, **characterized in that** said adjusting device (21) actuates said mobile clamping units (19) together in a controllable sequence, preferably simultaneously.

4. A clamping device in accordance with claim 1, 2 or 3, **characterized in that** said mobile clamping units (19) can be moved between a front clamped position and a rear inoperative position, wherein they are out of overlap with said component clamping contour (11) in the inoperative position.

5. A clamping device in accordance with one of the above claims, **characterized in that** said

mobile clamping units (19) can be moved in a translatory manner in two directions that extend essentially at right angles to one another.

6. A clamping device in accordance with one of the above claims, **characterized in that** said frame (12) is arch-shaped or ring-shaped and has a bottom part and a cover part (13, 14), which are arranged at spaced locations from one another and are rigidly connected with one another by said connection parts (15), wherein said clamping units (18, 19) and parts of said adjusting device (21) are arranged between said parts.

7. A clamping device in accordance with one of the above claims, **characterized in that** said mobile clamping units (19) that are adjacent to one another overlap at the points of impact with an offset in height and are mounted mutually displaceably.

8. A clamping device in accordance with one of the above claims, **characterized in that** said adjusting device (21) has a combined pushing and clamping drive (22, 23).

9. A clamping device in accordance with one of the above claims, **characterized in that** said adjusting device (21) has a integrated or external motor or manual drive (24, 52), preferably a cylinder, with a power divider (25) for jointly applying pressure to said mobile clamping units (19).

10. A clamping device in accordance with one of the above claims, **characterized in that** said combined pushing and clamping drive (22, 23) has a plurality of said cam shafts (26) arranged each at the points of impact of said pairs of clamping units (18, 19) with said feed and clamping cams (29, 31) at different heights.

11. A clamping device in accordance with one of the above claims, **characterized in that** said cam shafts (26) have said multi-armed actuating levers (27) for connection with said drive (24) or with said power divider (25).

5 12. A clamping device in accordance with one of the above claims, **characterized in that** said feed cams (29) are connected with said adjacent mobile clamping units (19) by means of said sliding blocks (30) and perform the feeding pushing movement.

10 13. A clamping device in accordance with one of the above claims, **characterized in that** said clamping cam (31) is connected with a clamping wedge arrangement (38, 39) by means of a sliding block (32) to generate the joint clamping movement of said adjacent mobile clamping units (19).

15 14. A clamping device in accordance with one of the above claims, **characterized in that** said clamping means (1) has one or more said feed devices (4, 5) for said clamping device or said clamping devices (2, 3).

15. A clamping device in accordance with one of the above claims, **characterized in that** said clamping device (2, 3) has at least one said support (17) for connection with said feed device (4, 5) or for fixing in the working position.

20 16. A clamping device in accordance with one of the above claims, **characterized in that** a plurality of said clamping devices (2, 3) have one or more said supports (17) for mutual connection in a series or for arrangement at an angle.

17. A clamping device in accordance with one of the above claims, **characterized in that** said feed device (5) has a holder (48) with at least one auxiliary axis for accommodating a plurality of said clamping devices (2) and for the internal feeding thereof to said components (8, 9) positioned on the outside.

5

18. A clamping device in accordance with one of the above claims, **characterized in that** said clamping devices (2) are arranged at standardized feed modules (49).

19. A clamping device in accordance with one of the above claims, **characterized in that** a
10 plurality of said feed modules (49) can be connected with one another to form a modular clamping frame (4).

20. A clamping device in accordance with one of the above claims, **characterized in that** said clamping segments (20, 20') have said, alternately projecting pins (58, 58'), which engage said,
15 corresponding flange openings (59) at said associated component flanges (11, 11').

21. A machining station with at least one said clamping device (1) in accordance with one of the above claims, **characterized in that** said machining station (6) is designed as a framing or welding station for said vehicle body shells (8, 9).